

# Carousel Documentation

The Carousel component is a modern, interactive image gallery component that provides an engaging way to display collections of images or content. Built with accessibility in mind, it features touch/swipe support, keyboard navigation, and intelligent card positioning that creates a stacked, 3D-like effect.

The component automatically handles responsive behavior, touch interactions, and provides smooth transitions between items while maintaining excellent performance through smart rendering strategies.

## How to use

Explore different carousel configurations and sizes with interactive demos.

## Basic Usage

```
<aava-carousel [items]="carouselItems"> </aava-carousel>
```

---

```
carouselItems: CarouselItem[] = [  
  {  
    id: '1',  
    imageUrl: 'assets/center.jpg',  
    imageAlt: 'Image 1',  
    routeUrl: '',  
  },  
  {  
    id: '2',  
    imageUrl: 'assets/right-1.jpg',  
    imageAlt: 'Image 2',  
    routeUrl: '',  
  },  
  {  
    id: '3',  
    imageUrl: 'assets/right-2.jpg',  
    imageAlt: 'Image 3',  
    routeUrl: '',  
  },  
  {  
    id: '4',  
    imageUrl: 'assets/left-2.jpg',  
    imageAlt: 'Image 4',  
    routeUrl: '',  
  },  
  {  
    id: '5',  
    imageUrl: 'assets/left-1.jpg',  
    imageAlt: 'Image 5',  
    routeUrl: '',  
  },  
];
```

The basic carousel demonstrates the default configuration with a set of items. It shows how items are displayed in a 3D stacked layout with smooth transitions. This is a great starting point for integrating a carousel in your application.

## Sizes

```

<aava-carousel [items]="carouselItems" size="xs"> </aava-carousel>
<aava-carousel [items]="carouselItems" size="sm"> </aava-carousel>
<aava-carousel [items]="carouselItems" size="md"> </aava-carousel>
<aava-carousel [items]="carouselItems" size="lg"> </aava-carousel>

```

---

```

carouselItems: CarouselItem[] = [
  {
    id: '1',
    imageUrl: 'assets/center.jpg',
    imageAlt: 'Image 1',
    routeUrl: '',
  },
  {
    id: '2',
    imageUrl: 'assets/right-1.jpg',
    imageAlt: 'Image 2',
    routeUrl: '',
  },
  {
    id: '3',
    imageUrl: 'assets/right-2.jpg',
    imageAlt: 'Image 3',
    routeUrl: '',
  },
  {
    id: '4',
    imageUrl: 'assets/left-2.jpg',
    imageAlt: 'Image 4',
    routeUrl: '',
  },
  {
    id: '5',
    imageUrl: 'assets/left-1.jpg',
    imageAlt: 'Image 5',
    routeUrl: '',
  },
];

```

## Available Sizes

Carousels come in four size variants to fit different interface needs. The size affects the card dimensions and spacing. Use smaller sizes for compact layouts and larger sizes for prominent sections.

- xs (Extra Small) - Extra compact size for very dense interfaces
- sm (Small) - Compact size for dense interfaces
- md (Medium) - Standard size for most use cases (default)
- lg (Large) - Prominent size for primary actions

## Autoplay

```
<aava-carousel [items]="carouselItems" [autoplay]="true"> </aava-carousel>
```

---

```
carouselItems: CarouselItem[] = [  
  {  
    id: '1',  
    imageUrl: 'assets/center.jpg',  
    imageAlt: 'Image 1',  
    routeUrl: '',  
  },  
  {  
    id: '2',  
    imageUrl: 'assets/right-1.jpg',  
    imageAlt: 'Image 2',  
    routeUrl: '',  
  },  
  {  
    id: '3',  
    imageUrl: 'assets/right-2.jpg',  
    imageAlt: 'Image 3',  
    routeUrl: '',  
  },  
  {  
    id: '4',  
    imageUrl: 'assets/left-2.jpg',  
    imageAlt: 'Image 4',  
    routeUrl: '',  },  
  {  
    id: '5',  
    imageUrl: 'assets/left-1.jpg',  
    imageAlt: 'Image 5',  
    routeUrl: '',  
  },  
];
```

■ The autoplay feature automatically transitions slides at the specified interval. It's ideal for galleries or highlight sections where user interaction may be minimal.

## With Titles

```
<aava-carousel [items]="carouselItemsWithTitles"> </aava-carousel>
```

---

```
carouselItemsWithTitles: CarouselItem[] = [
  {
    id: '1',
    imageUrl: 'assets/center.jpg',
    imageAlt: 'Image 1',
    title: 'Image-1',
  },
  {
    id: '2',
    imageUrl: 'assets/right-1.jpg',
    imageAlt: 'Image 2',
    title: 'Image-2',
  },
  {
    id: '3',
    imageUrl: 'assets/right-2.jpg',
    imageAlt: 'Image 3',
    title: 'Image-3',
  },
  {
    id: '4',
    imageUrl: 'assets/left-2.jpg',
    imageAlt: 'Image 4',
    title: 'Image-4',
  },
  {
    id: '5',
    imageUrl: 'assets/left-1.jpg',
    imageAlt: 'Image 5',
    title: 'Image-5',
  },
];
```

Carousels can also display item titles for additional context or labeling. This variant is useful when each slide represents a category, product, or feature that requires a clear textual description.

## Carousel Features

- Touch & Swipe Support : Full mobile touch interaction with swipe gestures
- Mouse Navigation : Drag and drop functionality with wheel support
- Keyboard Access : Arrow keys, home, and end key navigation
- Visual Indicators : Navigation dots and arrow controls
- Size Variants : Four size options (xs, sm, md, lg) for different use cases
- Smart Positioning : Intelligent card stacking and positioning
- Accessibility : ARIA support and screen reader compatibility

## Features

# Touch & Gesture Support

The carousel provides comprehensive touch interaction:

- Swipe Navigation : Left/right swipe to navigate between items
- Touch Sensitivity : Configurable swipe threshold (default: 50px)
- Multi-touch Support : Handles single-finger gestures properly
- Passive Events : Optimized touch event handling for performance

# Mouse & Keyboard Navigation

Multiple input methods for desktop users:

- Mouse Drag : Click and drag to navigate through items
- Wheel Support : Trackpad two-finger swipe support
- Keyboard Shortcuts : Arrow Left/Right : Navigate between items Home : Jump to first item End : Jump to last item
- Arrow Left/Right : Navigate between items
- Home : Jump to first item
- End : Jump to last item
- Focus Management : Proper focus trapping and restoration

# Smart Card Positioning

Advanced positioning system for visual appeal:

- Stacked Layout : Cards are positioned in 3D space with depth
- Dynamic Scaling : Cards scale based on distance from center
- Optimal Visibility : Shows maximum number of cards without overlap
- Smooth Transitions : CSS transitions for fluid animations
- Responsive Behavior : Adapts positioning based on screen size

# API Reference

## Input Properties

Property	Type	Default	Description
items	CarouselItem[]	[]	Array of carousel items to display
activeIndex	number	0	Initial active item index
size	'lg'   'md'   'sm'   'xs'	'md'	Size variant for the carousel
customStyles	Record<string, string>	{}	Inline CSS custom properties to override
autoplay	boolean	false	Enables automatic slide transition

Property	Type	Default	Description
autoplayInterval	number	2000	Interval duration (in ms) for autoplay t

## Output Events

Event	Type	Description
itemChange	EventEmitter<{ item: CarouselItem; index: number}>	Emitted whenever the active item changes

## Methods

- goToPrevious() — Move to the previous carousel item.
- goToNext() — Move to the next carousel item.
- goToSlide(index) — Jump directly to a specific slide.
- toggleAutoplay() — Toggles autoplay on or off.
- startAutoplay() — Starts autoplay manually.
- stopAutoplay() — Stops autoplay manually.

## CSS Custom Properties

Variable	Description
--carousel-in-duration	Duration for carousel entrance animation
--carousel-out-duration	Duration for carousel exit animation
--carousel-container-width	Width of the carousel container
--carousel-container-display	Display property for the carousel container
--carousel-container-flex-direction	Flex direction of the carousel layout
--carousel-container-align-items	Alignment of items inside the container
--carousel-viewport-height-xs	Viewport height for extra small screens
--carousel-viewport-height-sm	Viewport height for small screens
--carousel-viewport-height-md	Viewport height for medium screens
--carousel-viewport-height-lg	Viewport height for large screens
--carousel-radius-xs	Border radius for extra small size
--carousel-radius-sm	Border radius for small size
--carousel-radius-md	Border radius for medium size
--carousel-radius-lg	Border radius for large size
--carousel-image-radius	Border radius for carousel images
--carousel-bg	Background color of the carousel
--carousel-shadow	Default shadow styling for carousel cards
--carousel-shadow-hover	Shadow styling on hover
--carousel-transition-duration	Transition duration for carousel animations
--carousel-transition-timing	Timing function for transitions

Variable	Description
--carousel-shadow-transition	Transition property for shadow changes
--carousel-z-center	Z-index for the center card
--carousel-z-side-1	Z-index for first side cards
--carousel-z-side-2	Z-index for second side cards
--carousel-z-hidden	Z-index for hidden cards
--carousel-opacity-center	Opacity for center card
--carousel-opacity-side-1	Opacity for first side cards
--carousel-opacity-side-2	Opacity for second side cards
--carousel-opacity-hidden	Opacity for hidden cards
--carousel-scale-center	Scale for center card
--carousel-scale-side-1	Scale for first side cards
--carousel-scale-side-2	Scale for second side cards
--carousel-scale-hidden	Scale for hidden cards
--carousel-center-width-md	Width of the center card for medium screens
--carousel-center-height-md	Height of the center card for medium screens
--carousel-side-1-translate-md	Translate distance for first side cards (medium)
--carousel-side-2-translate-md	Translate distance for second side cards (medium)
--carousel-controls-margin-top	Top margin for carousel controls
--carousel-controls-gap	Gap between carousel controls
--carousel-indicators-gap	Gap between carousel indicators
--carousel-indicator-size	Size of the indicator dot
--carousel-indicator-active-size	Size of the active indicator
--carousel-indicator-color	Default indicator color
--carousel-indicator-active-color	Color of the active indicator
--carousel-indicator-border-radius	Border radius for indicator dots
--carousel-icon-color	Color of navigation icons
--carousel-icon-size	Size of navigation icons
--carousel-icon-transition	Transition for icon color changes

## Best Practices

### Content Organization

- Image Quality : Use appropriately sized images for each carousel size
- Alt Text : Always provide descriptive alt text for accessibility
- Item Count : Limit to 5-10 items for optimal performance
- Consistent Sizing : Use images with similar aspect ratios

## **User Experience**

- Touch Targets : Ensure navigation elements are large enough for touch
- Visual Feedback : Provide clear indication of current active item
- Loading States : Handle image loading gracefully
- Error Handling : Provide fallbacks for failed image loads

## **Performance**

- Image Optimization : Use compressed images and appropriate formats
- Lazy Loading : Consider implementing lazy loading for large galleries
- Change Detection : Component uses OnPush strategy for optimal performance
- Memory Management : Proper cleanup of event listeners

## **Accessibility**

- Keyboard Navigation : Ensure all functionality is keyboard accessible
- Screen Readers : Provide meaningful alt text and ARIA labels
- Focus Management : Maintain proper focus order and visibility
- High Contrast : Ensure sufficient contrast for all text and controls